

60,130-1968
04MRA0070

IN THE SPECIFICATION

Please amend paragraph 18 as follows:

An exhaust valve assembly 11 is disposed within the exhaust ~~system~~pipe 12. The exhaust valve assembly 11 includes a valve body 14 that is installed within the exhaust pipe 12. The valve body 14 houses a valve plate 24 that rotates about an axis of rotation 23 between an open and closed position. In the open position the valve plate 24 does not block a noticeable portion of the flow of exhaust gas~~flow~~ 16. In the closed position, the valve plate 24 preferably blocks between 75% and 90% of the flow of exhaust gas~~flow~~ 16. As appreciated, the specific amount of exhaust gas flow~~16~~ blocked by the valve plate 24 is tailored to a specific application to produce the desired consistent sound. The specific portion of the flow of exhaust gases~~flow~~ 16 blocked by the valve plate 24 provides control of sound emitted from the exhaust system 10.

Please amend paragraph 21 as follows:

A heat shield 18 is attached to the exhaust pipe 12 by straps 19 between the exhaust pipe 12 and the actuator 22. The heat shield 18 is spaced a distance from the exhaust pipe 12 to create an air space 17 (Figure 2) that aids in shielding heat from being emitted toward the actuator 22.

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Please amend paragraph 25 as follows:

The actuator 22 includes a first pull coil 21 and a second hold coil 25. The first pull coil and the second hold coil 25 are of differing configurations to provide differing magnitudes of force. The first pull coil 21 provides a higher force than the second hold coil 25. The actuator 22 must exert sufficient force to overcome pressures biasing the valve plate 24 toward the open position from the flow of exhaust gases ~~flow~~ 16. The first pull coil 21 produces a force to initiate movement of the valve plate 24 against the flow of exhaust ~~flow gas~~ 16. The second hold coil 25 produces less force than the first pull coil 21 and is of a lesser strength to utilize less power. The use of a reduced force coil provided by the second hold coil 25 is possible because maintaining the position of the valve plate 24 once the initial forces of the flow of exhaust ~~flow gas~~ 16 are overcome are lower. A worker with the benefit of this disclosure will recognize that other actuator configuration can be used to control the valve plate 24.

Please amend paragraph 28 as follows:

Referring to Figure 4, the valve neck 20 is shown with a first end 34 attached to the valve body 14. A second end 36 is attached to the support housing 38. The valve neck 20 and support housing 38 both include cross-sections 37,39 disposed in a direction transverse to the exhaust pipe 12. The cross-section 37 of the valve neck 12 transverse to the exhaust pipe is smaller than the cross-section 39 of the support housing 38 in a direction transverse to the exhaust pipe 12. The support housing 38 includes the plate 40. The plate 40 also acts as a secondary heat shield between the actuator 22 and the exhaust pipe 12. This is in addition to the heat shield 18 that is wrapped at least partially around the exhaust ~~the~~ pipe 12. The actuator 22 is partially exposed to the elements. This exposure provides some cooling benefits to the actuator 22.

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Please amend paragraph 30 as follows:

Referring to Figures 5A and 5B, an exhaust valve assembly 11' according to this invention includes a rotary actuator 56. The rotary actuator 56 is attached to rotate the actuation ~~shaft~~ tube 32. A torsion spring 58 is attached to the actuation ~~shaft~~ tube 32 to bias the rotary actuator 56 and actuation ~~shaft~~ tube 32 toward a position causing the valve plate 24 to move to the most open position. As appreciated, a worker having the benefit of this disclosure would understand that other electric actuators could be used to move the valve plate 24.

Please amend paragraph 31 as follows:

The actuator 22 is also isolated from heat emanating from the exhaust pipe 12 by the tubular portion ~~52-54~~ of the valve neck 20. Isolation of the actuator 22 from heat emitted by the exhaust pipe 12 enables the utilization of the electric actuator 22. The exhaust valve assembly 11 of this invention provides a durable, cost effective means of conditioning exhaust noises for variable displacement engines.